

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

WETLAND RESTORATION (ACRE) Code 657

DEFINITION

A rehabilitation of a drained or degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to the natural condition to the extent practicable.

PURPOSE

To restore hydric soil conditions, hydrologic conditions, hydrophytic plant communities, and wetland functions that occurred on the disturbed wetland site prior to modification to the extent practicable.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies only to sites with hydric soil which were natural wetlands that have been previously degraded hydrologically and/or vegetatively.

Upon completion of the restoration the site will meet the current NRCS soil, hydrology, and vegetation criteria for a wetland.

This practice is applicable only if natural hydrologic conditions can be restored by modifying drainage and/or artificial flooding of a duration and frequency similar to natural conditions. Pumping is not an acceptable method of approximating natural hydrologic conditions.

If the presence of hazardous waste materials in the sediment or fill is suspected, soil samples will be collected and analyzed for the presence of hazardous waste as defined by local, state, or federal authorities. Sites containing hazardous waste will not be restored under this standard.

This practice does not apply to:

1. Constructed Wetland (656) intended to treat point and non-point sources of water pollution;
2. Wetland Enhancement (659) intended to rehabilitate a degraded wetland where specific functions and/or values beyond original conditions; or
3. Wetland Creation (658) for creating a wetland on a site location which historically was not a wetland or was formerly a wetland but will be replaced with a wetland type not naturally occurring on the site.

CRITERIA

General Criteria. The landowner shall obtain necessary local, state, and federal permits that apply before the practice is applied. Refer to Table 3 for further details concerning permit requirements.

Water rights are assured prior to practice application if required.

Establish vegetative buffers on surrounding uplands around the wetlands to reduce the movement of sediment and soluble and sediment-attached substances carried by runoff. Use practice standard Filter Strip (393) to determine the minimum width of the vegetative buffer.

The soil, hydrology, and vegetative characteristics existing on the site and the contributing watershed shall be documented before the practice on the site begins.

Criteria for Hydric Soil Conditions. Restoration sites will be located on hydric soils.

If the hydric soil is covered by fill, sediment, spoil, or other depositional material, the site must be capable of meeting hydric soil criteria or the fill and/or sediment must be removed to the surface of the original hydric soil.

For areas of permanent water levels of 18 inches or less that are used as borrow sites, leave ground surface as irregular as possible.

Criteria for Wetland Hydrology. Hydrology should be available approximating the needs of the wetlands, and is defined as the rate, path, and timing of inflow and outflow, duration, frequency, and depth of flooding, ponding, or saturation.

Wetland hydrology should be restored as close as possible to its original condition before it was manipulated. As a minimum, the hydrologic soil condition must be able to support hydrophytic vegetation.

The standards and specifications for Dike (356) and Structure for Water Control (587) will be used as appropriate. Refer to the Engineering Field Handbook, Chapter 13, "Wetland Restoration, Enhancement, and Creation," and Chapter 6, "Structures," for additional design information. Existing drainage systems will be utilized, removed, or modified as needed to achieve the intended purpose.

Criteria for Hydrophytic Vegetation. The vegetation shall be restored as close to the original natural plant community as the restored site conditions will allow.

In soils where seedbanks of desirable species exist or natural succession of selected species will begin to occur in less than five years, then natural regeneration will be allowed for revegetation of the wetland. The topsoil from wetland excavated areas will be stockpiled and redistributed to maintain plant seedbanks.

In wetlands where supplemental vegetation is necessary, plantings will be done. Applicable guidelines can be found in Iowa

Biology Technical Note #9, Designing Areas for Wildlife; Iowa Biology Job Sheet #3, Waterfowl Food Plants and Their Management; Tree/Shrub Planting (612); Woodland Direct Seeding (652); Wildlife Wetland Habitat Management (644); and Engineering Field Handbook Chapter 13, Wetland Restoration, Enhancement, or Creation.

Plantings, seeding, or other types of vegetative establishment will be comprised of native species that occur on the wetland type being restored. Preference shall be given to plant materials collected within a 200-mile radius from the site or purchased from reliable plant sources.

Adequate substrate material necessary for proper establishment of the selected plant species shall be included in the design.

If uplands are planned as part of a restoration, then native seedlings should be used for these areas as well. Refer to Conservation Cover (327) for herbaceous restorations or Tree/Shrub Establishment (612), Woodland Direct Seeding (652) and Upland Wildlife Habitat Management (645) if trees and/or shrubs are desired.

Vegetative establishment should include a diverse range of plant species. Ensure that the approved seeding mixture does not include weed species and invasive species (e.g. Reed Canarygrass).

Criteria for Wetland Functions. A functional assessment shall be performed on the site prior to practice application using the appropriate method.

Application goals and objectives shall include targeted natural wetland functions for the wetland type and the site location as determined by the functional assessment and reference site data. A post-project assessment will be performed after an adequate period to assess the success of the practice application.

DESIGN CRITERIA

Subsurface Drain Plugging or Removal.

In areas where subsurface drains were used to remove surface water or soil saturation, the existing system will be modified to restore the wetland hydrologic conditions. Review of drainage records, interviews, and site investigations will be needed to determine the extent of the existing system.

The effects of the subsurface drainage system may be eliminated by one or a combination of the following:

1. removing or rendering inoperable a portion of the drain at the downstream edge of the site,
2. modifying the drain with a water control device,
3. replacing the drain with non-perforated pipe throughout the wetland site,
4. outletting the drain above the wetland area,
5. routing the drain around the wetland area.

When subsurface drainage alteration occurs, the upstream drainage must be maintained at its current capacity.

If the drain is routed around the wetland and perforated tubing or drain tile is used, the drain shall be located so that it has no lateral effect on the wetland area. This minimum offset distance from the wetland should be determined by scope and effect equations, see Engineering Field Handbook Chapter 19, Hydrology Tools for Wetland Determination.

Subsurface drains shall be removed or rendered inoperable throughout the wetland. Tile break spacing can be determined by the following formula:

$$\text{Tile Break Spacing} = \frac{\text{Drain Depth}}{2 \times \text{Grade}}$$

Where:

Tile Break Spacing - Distance between subsurface interval breaks (feet).

Drain Depth - Depth of subsurface drain below the ground surface (feet).

Grade - Grade of subsurface drain (feet/feet).

In no case shall the tile break spacing exceed 1500 feet. The minimum length of drain to be removed or rendered inoperable at each tile break is shown in Table 1.

Table 1. Drain Removed, Inoperable, or Rendered Conduit Installed

Permeability** (inches per hour)	Minimum Distance (feet)
Greater than 2.0	150
0.6 – 2.0	100
Less than 0.6	50

** Permeability is for the general profile. When the permeability varies throughout the profile, consider the type of drainage system and which layer(s) are critical. Standard values for permeability for each soil map unit can be found in the County Soil Survey or the Field Office Technical Guide.

Where dikes will be constructed, all subsurface drains shall be removed starting at the minimum distance, shown in Table 1, downstream of the dike centerline and extending an additional 15 feet upstream from the upstream toe of the dike. If the downstream removal distance is not possible, the subsurface drain should be removed as far downstream as possible and extend upstream the minimum distance as shown in Table 1.

Where water control structures are provided for wetland water level control, existing drains downstream of the site shall be protected by flow control devices.

Inflow will be limited to the capacity originally apportioned to the drain.

The water control structure will be attached to a non-perforated conduit that extends downstream at least the minimum length specified on Table 1. The connections of the water control structure and non-perforated conduit will be watertight for the pressure developed at the maximum pool level.

Disconnected subsurface drains leaving the wetland shall be blocked or connected to a water control structure. The ends of remaining disconnected subsurface drains shall be capped.

Small and Limited Duration Wetlands.

For wetland restoration areas less than five acres in size and of limited duration (15 years or less), the following procedure may be used. Capacity of mains and upstream subsurface drains providing an outlet for upstream areas through the wetland restoration shall be maintained.

All other subsurface drains shall be disabled for the life of the restoration. The portion of subsurface drains removed or rendered inoperable at the downstream edge of the site shall be no less than 10 feet. The trench constructed to remove the subsurface drains shall be backfilled in 12-inch lifts and compacted with similar soil so as to obtain a density of not less than the adjacent natural soils.

Ditch Plugging or Filling. Where man-made or man-enhanced drainage features were constructed to drain or to prevent water from entering a wetland, the drainageway will be filled with earth, rendered inoperable, or controlled with a water control structure to restore the wetland hydrologic conditions. Ditch plugs shall be designed and constructed according to criteria established for Wetland Dikes.

Provisions will be made to store, pass or divert the flow from the minimum design storm as outlined in Table 2 so that it does

not cause erosion or flooding impacts on non-wetland areas.

Flow over the top of the ditch plug may be used in limited cases. All of the following conditions must be met for flow over the ditch plug to be allowed:

1. Drainage area < 50 acres,
2. No trickle flow,
3. Fill height < 5 feet, and
4. Stable grade downstream

In these cases, use a minimum top width of 30 feet, 3:1 upstream slopes, and 10:1 or flatter downstream slopes.

Shallow Water Excavation. Shallow water excavations may be used to restore irregular ground features and diverse inundation periods. To accomplish this, shallow water excavations should have a variety of depths, which range from ground level to a maximum depth of four feet. For shallow water excavations in areas with buried hydric soils, the overburden can be removed to the surface of the original hydric soil.

Water depths of 0 to 18 inches are the most valuable for most wetland wildlife and should compose about 2/3 of the shallow water excavation, however, some of the area needs to be deeper to maintain open water areas. These deeper areas also extend the hydroperiod of surface water on sites, especially in drier years, for resident and migratory wildlife.

At least 50 percent of the excavated area should have side slopes of 6:1 or flatter. The remaining side slope area should not be steeper than 3:1. Side slope grades may be as gentle as 10:1 or flatter if site conditions allow, based on desired species management goals and objectives. Leave ground surface as irregular as possible.

Shallow water excavations shall be irregularly shaped to increase the edge and provide additional cover for wildlife utilizing the site. Design shallow water excavations with a variety of shapes and depths.

Create wetland complexes by linking shallow water excavations with level swales, which shall have irregular cross-sections similar to natural stream channels. Space shallow water excavations from 200 to 800 feet apart. Meander the connecting level swales.

Spoil material may be placed adjacent to the excavation in low, irregular mounds not more than three feet high. Mounds shall be discontinuous, placed on either side of the swale or shallow water excavation, and shall be done so as to blend with surrounding ground and accentuate irregular ground features. When applicable, either nesting islands or loafing areas may be constructed in shallow water excavation areas, if needed, for soil placement. See Wetland Islands for additional guidance on island construction.

Topsoil shall be removed and stockpiled first. Spread stockpiled topsoil on disturbed areas after excavation is complete to provide seed stock and speed re-vegetation of the disturbed areas.

Wetland Dikes

General. Criteria in this section shall be followed except that dikes with an effective height greater than 10 feet shall be designed using the criteria for Pond (378) or Grade Stabilization Structure (410). If a DNR permit is required, more restrictive criteria may apply.

Foundation Cutoff. A core trench shall be installed, if necessary, to insure dike stability and to prevent excess seepage losses. This may include entire dikes on organic soils, short sections located in old drainageways, or areas near a water control structure. The core trench shall have a bottom width adequate for the necessary excavation, backfill, and compaction, but not less than 4 feet. Side slopes shall not be steeper than 1.5:1.

Earthfill. Dikes shall have constructed side slopes of 3:1 or flatter. The minimum top width shall be 10 feet.

The difference in elevation between the crest of the vegetated spillway and the top of the settled dike shall be the greater of the flow depth of the freeboard storm through the vegetated spillway or the depth as shown in Table 2.

A wave protection berm not less than 10 feet wide is recommended for all wetland dikes. The berm shall be provided at or above normal pool elevation to dampen out wave action. A wave protection berm shall be required when the normal water depth at the dike is greater than 4 feet and the portion of the pool area deeper than 4 feet is greater than 5 acres. A berm with a minimum 10 foot radius shall be provided around a 24 inch diameter or larger water control structure.

If muskrats or other burrowing animals are a concern to the dike integrity, install one of the following measures:

1. 10 foot berm 0.5 feet above the crest elevation,
2. sloping berm at 10:1 or flatter with a minimum width of 10 feet above crest elevation.

The design height of the dike shall be increased by a minimum 5 percent to allow for settlement.

Principal Spillway. A principal spillway shall be provided to control the storm as indicated in Table 2, and shall meet the requirements of Water Control Structure. The minimum pipe conduit size is listed in Table 2. The inlet elevation of the principal spillway should be such that the principal spillway flows at full pipe flow before the vegetated spillway operates. In no case shall the difference in elevation between the principal and vegetated spillway be less than 0.5 foot.

Vegetated Spillway. The vegetated spillway shall be designed to safely control the flow from the storm as indicated in Table 2. Use of vegetated spillways in natural low areas without shaping is desirable since established vegetation is

not disturbed. A natural or excavated spillway shall have a minimum 10 foot bottom width.

Refer to Engineering Field Handbook Chapter 11, Ponds and Reservoirs, for design procedures.

Floodplain Wetland Dikes. In addition to the Wetland Dike criteria, dikes located on a floodplain, where overtopping of the dike by flow from the floodway into the wetland is likely, may have the vegetated spillway area on level natural ground, in excavation, or on compacted fill. Vegetated spillways shall be at least 100 feet wide and have a crest length of at least 25 feet.

Compacted fill spillways shall meet the following criteria:

1. Height of spillway crest to downstream toe is 2 feet or less,
2. Design flow depth of 0.5 feet or less,
3. Inlet and outlet slopes shall be 5:1 or flatter, and
4. Mulching of spillway is required.

The dike for a distance of 50 feet on each side of the principal spillway or water control structure shall have an additional 1 foot of overfill added to the constructed height to protect the control structure from damage by the overflow water.

The vegetated spillway shall be located in a position that minimizes the likelihood for flood flows from the stream system to damage the dike and water control structure and vegetated spillway.

Vegetation. The entire earthfill dike and vegetated spillway areas shall have a protective vegetative cover established. A seeding plan shall be prepared following Critical Area Planting (342).

Water Control Structure

Mechanical outlets serve the purposes of maintaining a desired water level and reducing damage caused by storm runoff and trickle flow. A water control structure may also include devices for manipulating

the water level in the wetland such as stop-logs or valves.

If base flow which may include seepage, subsurface drainage or spring flow exists, a trickle tube or water control structure shall be provided. Base flow can be designed as the greater of (1) the quick return flow (see Engineering Field Handbook Chapter 2, Estimating Runoff and Peak Discharge), or (2) the capacity of the intercepted subsurface drainage system. A trickle tube shall have a minimum diameter of 4 inches.

Natural drawdown through evapo-transpiration is a natural and often desirable process rather than regulating water levels with water control structures. Drawdown of permanent storage is often necessary or desirable to manage wetlands. A drawdown pipe shall be designed to accomplish management objectives in a timely manner. Any drawdown device should be so situated that the entire pool area is not drained down even if the drawdown structure is completely open. This maintains some water for both resident wildlife and late migratory species, especially in dry years. For additional information on drawdown timing see Iowa Biology Technical Note #20, Wetland Vegetation and Water Management Considerations.

Animal guards shall be installed on conduit outlets of 10 inches in diameter or smaller.

An anti-seep collar shall be used if the conduit:

1. has a smooth exterior and is larger than 8 inches in diameter,
2. has a corrugated exterior and is larger than 12 inches in diameter, or
3. is installed at a depth of 10 feet or more below management pool level. The collar shall extend a minimum of 2 feet beyond the outside diameter of the conduit.

If needed, to prevent clogging of the conduit, an appropriate trashguard shall be installed at the inlet or riser.

Non-perforated conduits shall be used downstream of a water control structure for distances as shown in Table 1 and under any dike. Materials shall meet the requirements for Underground Outlet (620) for fill heights over the conduit of 10 feet or less when installed in a trench condition. Materials for all other conditions shall meet Pond (378) requirements.

Wetland Islands

Islands provide nesting areas, cover areas and loafing areas for waterfowl and other wetland wildlife. An island may be constructed by excavating around existing ground or placement of spoil material. The side slopes should be a minimum of 4:1, however, slopes of 6:1 are desirable. The settled top of the island shall be a maximum of one foot above the auxiliary spillway crest. Islands should be irregular in shape and topography.

Submerged islands help provide desirable diversity to wetlands. They may be constructed 6 to 18 inches below the anticipated normal water level. This provides visual breaks within the shallow water excavation and intersperses open water with vegetation providing additional cover.

Guidelines for construction of nesting islands is found in Iowa Biology Technical Note #19, Creation of Waterfowl Nesting Islands.

Water Depths

Wetland ecosystems can exist where water depths range from surface saturated soil up to about 6 feet of standing water. Variable water depths, which provide for diverse ecosystems, are desirable within wetlands. Water depths and wetland configurations are largely dependent on individual site parameters. The examples listed below provide guidelines for two common wetland applications.

1. Wetland for waterfowl management.
Under normal spring conditions a minimum of 50 percent of the surface area should have 0 to 18 inches of water with emergent vegetation. The remaining area should consist of open water pockets having a minimum depth of 3 feet and these should be interspersed among the vegetation. (For additional information on waterfowl management see Iowa Biology Technical Note #20.)
2. Wetland with water quality emphasis.
At least 75 percent of the surface area should be covered with emergent vegetation by use of water depths of less than 3 feet.

Biologists from the Fish and Wildlife Service, the Department of Natural Resources, or NRCS may provide guidance for achieving specific objectives.

CONSIDERATIONS

The objectives of a wetland project should describe the specific functions to be achieved. Successful attainment of those wetland functions will require consideration of soils, hydrology, vegetation, fish and wildlife, problem plants and animals, recreational use, aesthetic quality, cultural features, social factors, economic considerations, environmental evaluation, and permits and regulations. Refer to Engineering Field Handbook Chapter 13 for additional information on wetland functions.

The planned purposes and functions of the wetland will determine the desired water regime. The success of plant and animal species in the wetland is influenced by water depth and the timeliness and frequency of water depth fluctuation. Soils, subsurface flows, and watershed to management pool area ratio will affect water levels and fluctuations in wetlands. The timing and extent of any water level manipulations need to be done based on those factors.

The drainage area above the wetland shall be protected against erosion so that the expected sedimentation will not shorten the planned effective life of the wetland.

The water quality of the drainage area shall be suitable for the intended use of the wetland.

Any existing surface or subsurface drainage systems that would affect or be affected by the wetland should be located and measures should be taken to determine the extent of those systems. The work associated with the wetland must not adversely affect the capacity of drainage systems on other properties. Surface water must not back onto an adjoining property unless the landowner has an easement.

Wetlands affect the volume and rate of runoff, infiltration, evaporation, transpiration, deep percolation, and groundwater recharge. Wetlands may affect water table levels as well as downstream flows or aquifers.

Wetlands remove sediment from runoff, which reduces the amount of pathogens and sediment-attached substances that would be carried in downstream surface waters. There is a potential for a change in the amount of soluble substances entering into the groundwater system.

Consider as a high priority those sites adjacent to existing wetlands.

Consider linking wetlands by corridors wherever appropriate to enhance the wetland complex. By diversifying the types of wetlands within a complex, a wider variety of wildlife species are impacted.

Dikes and excavated areas should be shaped in a manner that is compatible with the existing landscape.

Location of the water control structure in reference to the dike should be placed so as to fulfill the management objectives and purposes of the wetland.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications for installing structures for water control shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

The following list of Construction Specifications is intended as a guide to selecting the appropriate specifications for each specific project. The list includes most but may not contain all of the specifications that are needed for a specific project:

IA-1	Site Preparation
IA-3	Structure Removal
IA-5	Pollution Control
IA-6	Seeding and Mulching for Protective Cover
IA-9	Drainage Tile Investigation and Removal
IA-11	Removal of Water
IA-13	Sheet Piling
IA-21	Excavation
IA-23	Earthfill
IA-26	Salvaging and Spreading Topsoil
IA-27	Diversions
IA-31	Concrete
IA-32	Concrete for Non-structural Slabs
IA-45	Plastic (PVC, PE) Pipe
IA-46	Tile Drains for Land Drainage
IA-51	Corrugated Metal Pipe
IA-52	Steel Pipe Conduits
IA-61	Loose Rock Riprap
IA-81	Metal Fabrication and Installation

- IA-83 Timber Fabrication and Installation
- IA-92 Fences
- IA-95 Geotextile

OPERATION AND MAINTENANCE

An operation and management plan will be prepared for each wetland site. The following activities should be addressed in the plan:

1. Timing and level setting of water control structures required for establishment of desired hydrologic conditions or for management of vegetation.
2. Inspection schedule of dikes and structures for damage assessment.
3. Depth of sediment accumulation allowed before removal is required.
4. Management needed to maintain vegetation, including control of unwanted vegetation in and around the wetland area.
5. Acceptable uses and timing (e.g. grazing and haying).

Table 2. Wetland Dike Spillway Requirements¹

	Drainage Area (Acres)	Minimum Conduit Diameter (Inches)	Maximum Storage Capacity (Acre-Feet)	Effective Fill Height (Feet)	Minimum Design Frequency (24-hr. Duration Storm)		Minimum Vegetated Spillway Depth (Feet)
					Principal Spillway (Year)	Vegetated Spillway (Year)	
Iowa NRCS Design Criteria	0 – 20	4	≤ 50	0 – 5 5 – 10	---- ² ---- ²	10 10	1 1
	20 – 80	6	≤ 50	0 – 5 5 – 10	---- ² 2 ³	10 10	1 1
	80 – 250	10	≤ 50	0 – 5 5 – 10	--- ² 2 ³	25 25	1 1
	0 – 250	12	> 50	0 – 5 5 – 10	2 ³ 5	50 50	1 1
	250 – 1000	15	≤ 50	0 – 5 5 – 10	2 ³ 10	50 50	1 1
	250 – 1000	15	> 50	0 – 5 5 – 10	5 10	50 50	1 1
	≥ 1000	15	-----	0 – 5 5 – 10	5 10	50 50	1 1
IDNR Dams	< 250	12 ⁴	-----	-----	10	50	1
	≥ 250	18 ⁴	-----	-----	25	50	1
¹ If a DNR permit is required, more restrictive criteria may apply. ² Mechanical Spillway not required unless continuous base flow exists. ³ The principal spillway capacity need not exceed the capacity of the D-drainage curve, see Engineering Field Handbook Chapter 14, Drainage. ⁴ These are guidelines set by IDNR. The NRCS requirement for pipe size is normally acceptable.							

TR-60 Use TR-60 design procedures for all Moderate and High Hazard Structures, and for Low Hazard Structures with Effective Height of more than 35 Feet or Effective Height times Storage Capacity of 3000 or more.

INVENTORY DIKES

- 1) Overall height of more than 6 Feet and storage capacity of 50 Acre-Feet or more
- 2) Overall height of 25 Feet or more and storage capacity of 15 Acre-Feet or more

DEFINITIONS

Effective Fill Height	Vegetated Spillway Crest minus Ditch Bottom on Centerline of Fill
Fill Height	Design Top of Fill minus Ditch Bottom on Centerline of Fill
Overall Height	Design Top of Fill minus Downstream Toe of Dike
Storage Capacity	Acre-Feet at Vegetated Spillway Crest or Top of Fill if no Vegetated Spillway
Permanent Storage	Acre-Feet at Principal Spillway or Management Pool Elevation

Table 3. Permits¹ Applicable to Wetland Restoration, Enhancement, or Creation

Iowa Department of Natural Resources	IDNR Storage Permit Required when Permanent Storage is Greater than 18 Acre-Feet	⇒	DNR Form 18
	IDNR Floodplain Construction Permit – Dams 1) Permanent Storage Greater than 18 Acre-Feet and Overall Height ≥ 5 feet, OR 2) Total Storage at Top of Dam Greater than: 50 Acre-Feet if structure has Vegetated Spillway, 25 Acre-Feet if structure has no Vegetated Spillway, and Overall Height ≥ 5 Feet, OR 3) Drainage Area Greater than 10 Square Miles and Overall Height ≥ 5 Feet, OR 4) Within 1 Mile of incorporated area, Overall Height ≥ 10 Feet, and Total Storage at Top of Dam Greater than or Equal to 10 Acre-Feet, and Discharge Flows Through Incorporated Area	⇒	DNR Form 36² Use Design Requirements from Table 3 for IDNR "Dams."
	IDNR Floodplain Construction Permit – Levees and Dikes Located on a floodplain which drains: OR 1) More than 10 Square Miles in rural areas 2) More than 2 Square Miles in urban areas	⇒	DNR Form 36² Specified offset distances from stream channel must be used. Effects of the construction project on the flood profile are evaluated.
	IDNR Construction Permit – Sovereign Lands Required on State owned lands and waters including meandered stream channels	⇒	DNR Form 36²
	IDNR Clean Water Act Section 401 Water Quality Certification Required on all projects requiring Federal Clean Water Act Section 404 Permit	⇒	DNR/Corps Joint Application Form

¹The DNR and the Corps recommend submittal of the Joint Application if it is unclear whether a permit is required.

²The DNR/Corps Joint Application Form also serves as DNR Form 36.

Table 3. (Con't) Permits¹ Applicable to Wetland Restoration, Enhancement, or Creation

U.S. Army Corps of Engineers	<p>Federal Clean Water Act Section 404 Permit</p> <p>Required for construction activities in "Waters of the United States." These waters include navigable waters and tributaries, interstate waters and tributaries, and any other waters including lakes, intermittent streams, prairie potholes, and wetlands.</p> <p>Nationwide permits allow a simplified way to receive approval for construction versus the individual permit process which otherwise applies. The Corps may determine that an individual permit is required if the proposed work has a significant impact.</p> <p>Not every wetland activity is covered by a Nationwide Permit. Be sure to consult the applicable permits to be sure that the planned activity does not violate one of the restricted conditions.</p> <p><u>Applicable Nationwide Permits Include</u></p> <p>#27 Activities involving restoration of altered and degraded wetlands or creation of wetlands, in accordance with a binding agreement between NRCS or Fish and Wildlife Service and the landowner.</p> <p>#40 Discharge of dredged or fill material for the purposes of improving agricultural production. Authorized activities include the installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; or the relocation of existing serviceable drainage ditches constructed in waters of the United States.</p> <p>#41 Discharge of dredged or fill material to modify the cross-sectional area configuration of currently serviceable drainage ditches constructed in waters of the United States.</p> <p>#42 Discharge of dredged or fill material for the purpose of construction or expansion of recreational facilities.</p> <p>#43 Discharge of dredged or fill material for the construction and maintenance of stormwater management facilities including activities for the excavation of stormwater ponds, detention basins, retention basins, the installation and maintenance of water control structures, and outfall structures.</p>	<p>DNR/Corps Joint Application Form²</p> <p><u>Nationwide Permit #27</u></p> <p>Include a copy of the binding agreement or documentation with the application.</p> <p><u>Nationwide Permits #40, #41, #42, and #43</u></p> <p>The application package needs to include a wetland delineation and a statement that the State Historic Preservation Office and the U.S. Fish and Wildlife Service have been notified of the proposed work.</p>

¹The DNR and the Corps recommend submittal of the Joint Application if it is unclear whether a permit is required.

²The DNR/Corps Joint Application Form also serves as DNR Form 36.